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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/090,954	03/05/2002	Fumihiko Kato	FPM-02901	6433
26339	7590	02/24/2006	EXAMINER PIZIALI, JEFFREY J	
MUIRHEAD AND SATURNELLI, LLC 200 FRIBERG PARKWAY, SUITE 1001 WESTBOROUGH, MA 01581			ART UNIT 2673	PAPER NUMBER

DATE MAILED: 02/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/090,954	KATO, FUMIHIKO	
	<b>Examiner</b>	<b>Art Unit</b>	
	Jeff Piziali	2673	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 07 November 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-7, 12 and 13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7, 12 and 13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 May 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |                                                                                         |                                                                             |
|-----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____                                                |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____                                                             | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Priority***

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Continued Examination Under 37 CFR 1.114***

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 7 November 2005 has been entered.

### ***Drawings***

3. The drawings were received on 18 May 2004 (Paper No. 5). These drawings are acceptable.

### ***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Independent claims 1 and 12 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such

omission amounting to a gap between the necessary structural connections. See MPEP

§ 2172.01. The omitted structural cooperative relationships are between "*a polarity control signal*" (established in line 3 of both claims) and "*a value of an input polarity signal*" (as recited in line 12 of both claims). It would remain unclear to one having ordinary skill in the art whether the claimed subject matter in question refers to a single polarity signal, or instead refers to two separate and distinct polarity signals. The instant specification discloses only a single "polarity control signal" [Figs. 2 and 4; 106]. However, newly amended (see the Amendment submitted 7 November 2005) claim language suggests the possible presence of multiple, unique polarity signals.

6. Claim 13 is further rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are between "said plurality of voltages" (as recited in the 2nd to last line of claim 13), "a plurality of voltages" (as recited in the 2nd line of claim 13), and the "correcting voltages" (as recited in the 2nd to last line of claim 12). The claims are drawn to a multitude of different and unique voltage signals; and one skilled in the art would be unable to definitively determine what exact voltages are meant by "said plurality of voltages" (as recited in the 2nd to last line of claim 13).

7. Claims 2-7 are further rejected under 35 U.S.C. 112, second paragraph due to their dependency upon rejected base claims 1 and 12.

***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1, 3-7, 12, and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Tamai et al. (US 6,160,533).

Regarding claim 1, Tamai discloses an LCD control unit for driving an LCD panel in an LCD device, the LCD control unit, comprising: a signal controller [Fig. 1; 39] for generating a voltage address signal [Fig. 4; LS] and a polarity control signal [Fig. 4; POLARITY INVERSION] (see Column 14, Line 27 - Column 15, Line 34); a voltage generator block [Fig. 4; 62], coupled to the signal controller (see Fig. 1), for internally generating a plurality of (n)  $\gamma$ -voltage levels [Fig. 4; at AS1-8] and a plurality of (m) Vcom-voltage levels [Fig. 1; Q]; the voltage generator block including a voltage selecting block [Fig. 4; 61], wherein output of the voltage generating block is selected by the voltage selecting block from the plurality of (n)  $\gamma$ -voltage levels and the plurality of (m) Vcom-voltage levels according to a value of the voltage address signal input to the voltage generator block; an impedance converter block [Fig. 4; AS1-8], coupled to the signal controller (see Fig. 1) and coupled to and separate from the voltage generator block (see Fig. 4), that converts input impedances of the  $\gamma$ -voltage levels and the Vcom-voltage levels provided by the voltage generator block and provides as output [Fig. 4; "out"] a specified number of  $\gamma$ -correction voltages and the Vcom-voltage according to a value of

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an input polarity signal [Fig. 4; POLARITY INVERSION]; and an LCD driver [Fig. 1; 37] for generating a set of display data signals [Fig. 1; O1-ON] based on a set of external data signals [Fig. 1; D0-D2], wherein the LCD driver receives the specified number of the  $\gamma$ -correction voltages output from the voltage selecting block and includes a  $\gamma$ -correction section [Fig. 14; 37b] for correcting voltages of the display data signals based on the specified number of the  $\gamma$ -correction voltages (see Column 16, Line 14 - Column 17, Line 15 and Column 23, Lines 16-32).

Regarding claim 3, Tamai discloses the voltage generator block includes a resistor string [Fig. 4; 62] for generating  $n \times L$  voltage levels,  $n$  first decoders [Fig. 14; DE1-DEN] for selecting [Fig. 14; ASW1-ASWN] the  $n$   $\gamma$ -voltage levels [Fig. 14; 42a & 42b] from the  $n \times L$  voltage levels based on the voltage address signal, and  $m$  second decoders [Fig. 15; DEi] for selecting the  $m$  Vcom-voltage levels [Fig. 15; 42] from the  $n \times L$  voltage levels based on the voltage address signal, given number  $L$  being an integer (see Column 23, Line 16 - Column 24, Line 35).

Regarding claim 4, Tamai discloses the specified number of  $\gamma$ -correction voltages are a pair of  $\gamma$ -correction voltages [Figs. 7 & 14; 42a & 42b] (see Column 18, Lines 40-46).

Regarding claim 5, Tamai discloses the voltage selecting block alternately selects the pair of  $\gamma$ -correction voltages having a positive polarity and the pair of  $\gamma$ -correction voltages having a negative polarity, with respect to the Vcom voltage (see Column 16, Lines 48-63).

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Regarding claim 6, Tamai discloses the voltage generator block includes a resistor string [Fig. 4; 62] for generating a plurality of voltage levels, a decoder [Fig. 14; DE1-DEN] for decoding the voltage address signal, and a selector [Fig. 14; ASW1-ASWN] for selecting one of the  $\gamma$ -voltage levels or one of the Vcom voltage levels (see Column 23, Line 16 - Column 24, Line 35).

Regarding claim 7, Tamai discloses the LCD control unit is a one-chip IC (see Column 5, Lines 24-41).

Regarding claim 12, this claim is rejected by the reasoning applied in the above rejection of claim 1.

Regarding claim 13, Tamai discloses the  $\gamma$ -correction section [Fig. 14; 37b] generates a plurality of voltages based on the specified number of the  $\gamma$ -correction voltages [Fig. 4; at AS1-8], and the voltages of display data signals [Fig. 1; O1-ON] are selected from the plurality of voltages based on the set of external data signals [Fig. 1; D0-D2] (see Column 16, Line 14 - Column 17, Line 15 and Column 23, Lines 16-32).

### ***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tamai et al. (US 6,160,533) in view of Gormish (US 5,910,796).

Regarding claim 2, Tamai does not expressly disclose the voltage address signal and the polarity control signal are generated based on a software as time series signals. However, Gormish discloses software controlling and setting gamma correction signals (see Column 1, Lines 12-46). Tamai and Gormish are analogous art because they are from the shared field of gamma correcting display devices. Therefore, it would have been obvious to one skilled in the art to substitute Gormish's software control in the place of Tamai's hardware control, so as to provide a convenient means of gamma correcting the display for the user.

### ***Response to Arguments***

12. Applicant's arguments filed 7 November 2005 have been fully considered but they are not persuasive. The Applicant contends the cited prior art of Tamai et al. (US 6,160,533) neglects teaching a voltage generator block including a voltage selecting block, and an impedance converter block being separate from the voltage generator block (see Page 7 of the Amendment filed 7 November 2005). However, the examiner must respectfully disagree.

The applicant argues that if Tamai's "impedance converter block" is constituted by switches [Fig. 4; AS1-AS8] and Tamai's "voltage selecting block" is illustrated as reference numeral 63 in Figure 4; then reasonably Tamai's impedance converter block cannot be considered to be *separate* from the "voltage generator block" (which, as instantly claimed, includes the "voltage selecting block"). While Applicant's reasoning may arguably be true, the



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examiner respectfully counters that when Tamai's timing control circuit [Fig. 4; 61] is instead taken to be the claimed "voltage selecting block;" Tamai does indeed expressly disclose a voltage generator block [Fig. 4; 62], coupled to a signal controller [Fig. 1; 39], for internally generating a plurality of (n)  $\gamma$ -voltage levels [Fig. 4; at AS1-8] and a plurality of (m) Vcom-voltage levels [Fig. 1; Q]; the voltage generator block including a voltage selecting block [Fig. 4; 61], wherein output of the voltage generating block is selected by the voltage selecting block from the plurality of (n)  $\gamma$ -voltage levels and the plurality of (m) Vcom-voltage levels according to a value of the voltage address signal input to the voltage generator block; an impedance converter block [Fig. 4; AS1-8], coupled to the signal controller (see Fig. 1) and coupled to and separate from the voltage generator block (see Fig. 4; Column 16, Line 14 - Column 17, Line 15).

By such reasoning, rejection of the claims is deemed necessary, proper, and thereby maintained at this time.

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***Conclusion***

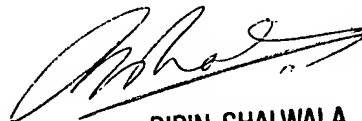
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeff Piziali whose telephone number is (571) 272-7678. The examiner can normally be reached on Monday - Friday (6:30AM - 3PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on (571) 272-7681. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



J.P.  
17 February 2006



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